I Claim:

1. A method for operating an internal combustion engine, the method which comprises:

measuring emission values of at least two pollutant components of an exhaust gas of an internal combustion engine, the at least two pollutant components including a first pollutant component and a second pollutant component;

changing a value of at least one operating parameter of the internal combustion engine in order to decrease an emission value of the first pollutant component if the emission value of the first pollutant component exceeds a given maximum threshold value; and

monitoring an emission value of the second pollutant component in order to determine whether the emission value of the second pollutant component remains below a maximum value for the second pollutant component and whether an increase in the emission value to the maximum value for the second pollutant component is permitted.

2. The method according to claim 1, which comprises using, as the internal combustion engine, an engine selected from the group consisting of a diesel internal combustion engine and a spark ignition engine configured for a lean running operation.

3. The method according to claim 1, which comprises:

monitoring, as the first pollutant component, a component selected from the group consisting of CO, NO, NO_2, NH_3, SO_2, H_2S, CH_4 and a hydrocarbon component; and

monitoring, as the second pollutant component, a further component selected from the group consisting of CO, NO, NO_2, NH_3, SO_2, H_2S, CH_4 and a hydrocarbon component.

4. The method according to claim 1, which comprises using, as the at least one operating parameter of the internal combustion engine, at least one parameter selected from the group consisting of a throttle valve position, an exhaust gas recirculation rate, an ignition time, a tumble valve position, an injection time, a charge pressure and a phase position of a camshaft.

5. The method according to claim 1, which comprises measuring, as the emission values, values of a raw emission.

6. The method according to claim 1, which comprises:

using hydrocarbon as the first pollutant component; and

using at least one component selected from the group consisting of nitrogen oxide and carbon monoxide as the second pollutant component.

7. The method according to claim 1, which comprises:

using nitrogen oxide as the first pollutant component; and

using at least one component selected from the group consisting of carbon monoxide and hydrocarbon as the second pollutant component.

8. The method according to claim 1, which comprises:

using carbon monoxide as the first pollutant component; and

using at least one component selected from the group consisting of nitrogen oxide and hydrocarbon as the second pollutant component.

9. The method according to claim 1, which comprises choosing at least one pollutant value as a function of an operating point of the internal combustion engine, wherein the at least one pollutant value is selected from the group consisting of the given maximum threshold value of the first pollutant component, a minimum threshold value of the first pollutant

component and the maximum value of the second pollutant component.

10. The method according to claim 1, which comprises:

choosing at least one pollutant value as a function of an operating point selected from the group consisting of a load of the internal combustion engine, a rotational speed of the internal combustion engine and an operating temperature of the internal combustion engine; and

using, as the at least one pollutant value, a value selected from the group consisting of the given maximum threshold value of the first pollutant component, a minimum threshold value of the first pollutant component and the maximum value of the second pollutant component.

11. The method according to claim 1, which comprises:

providing a catalytic converter device in an exhaust gas system of the internal combustion engine; and

choosing at least one threshold value selected from the group consisting of the maximum threshold value of the first pollutant component and a minimum threshold value of the first pollutant component as a function of an operating point of one

of the catalytic converter device and the internal combustion engine.

12. The method according to claim 1, which comprises:

providing a catalytic converter device in an exhaust gas system of the internal combustion engine; and

choosing at least one threshold value selected from the group consisting of the maximum threshold value of the first pollutant component and a minimum threshold value of the first pollutant component as a function of an operating temperature of the catalytic converter device.

13. The method according to claim 1, which comprises providing a catalytic converter device including a catalytic converter selected from the group consisting of a three-way catalytic converter, an oxidation catalytic converter, and a NO_x storage catalytic converter.

14. The method according to claim 1, which comprises providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine.

15. The method according to claim 1, which comprises:

providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine; and

separately determining emission values assigned to respective ones of the exhaust gas paths.

16. The method according to claim 1, which comprises determining accumulated emission values of at least two pollutant components.

17. The method according to claim 1, which comprises using at least one electrochemical sensor in order to determine the emission values of the at least two pollutant components.

18. The method according to claim 1, which comprises using at least one optical sensor in order to determine the emission values of the at least two pollutant components.

19. The method according to claim 1, which comprises using at least one optical sensor operating according to a principle of reflection spectroscopy in order to determine the emission values of the at least two pollutant components.

20. The method according to claim 1, which comprises using at least one optical sensor operating in an infrared light range

in order to determine the emission values of the at least two pollutant components.

21. The method according to claim 1, which comprises using at least one sensor having at least one property selected from the group consisting of a measuring time of less than 500 microseconds and measuring intervals of less than 200 microseconds in order to determine the emission values of the at least two pollutant components.

22. The method according to claim 1, which comprises using at least one sensor to determine both, the emission values of the at least two pollutant components and a lambda value of the exhaust gas.

23. A method for operating an internal combustion engine, the method which comprises:

determining emission values of at least two pollutant components of an exhaust gas of an internal combustion engine, the at least two pollutant components including a first pollutant component and a second pollutant component; and

changing a value of at least one operating parameter of the internal combustion engine if an emission value of the first pollutant component drops below a given minimum threshold

value in order to increase the emission value of the first pollutant component to at most the given minimum threshold value in order to decrease at least an emission value of the second pollutant component.

24. The method according to claim 23, which comprises determining, as the emission values, values of a raw emission.

25. The method according to claim 23, which comprises:

using hydrocarbon as the first pollutant component; and

using at least one component selected from the group consisting of nitrogen oxide and carbon monoxide as the second pollutant component.

26. The method according to claim 23, which comprises:

using nitrogen oxide as the first pollutant component; and

using at least one component selected from the group consisting of carbon monoxide and hydrocarbon as the second pollutant component.

27. The method according to claim 23, which comprises

using carbon monoxide as the first pollutant component; and

using at least one component selected from the group consisting of nitrogen oxide and hydrocarbon as the second pollutant component.

28. The method according to claim 23, which comprises choosing at least one pollutant value as a function of an operating point of the internal combustion engine, wherein the at least one pollutant value is selected from the group consisting of a given maximum threshold value of the first pollutant component, the minimum threshold value of the first pollutant component and a maximum value of the second pollutant component.

29. The method according to claim 23, which comprises:

choosing at least one pollutant value as a function of an operating point selected from the group consisting of a load of the internal combustion engine, a rotational speed of the internal combustion engine and an operating temperature of the internal combustion engine; and

using, as the at least one pollutant value, a value selected from the group consisting of a given maximum threshold value of the first pollutant component, the minimum threshold value

of the first pollutant component and a maximum value of the second pollutant component.

30. The method according to claim 23, which comprises:

providing a catalytic converter device in an exhaust gas system of the internal combustion engine; and

choosing at least one threshold value selected from the group consisting of a maximum threshold value of the first pollutant component and the minimum threshold value of the first pollutant component as a function of an operating point of one of the catalytic converter device and the internal combustion engine.

31. The method according to claim 23, which comprises:

providing a catalytic converter device in an exhaust gas system of the internal combustion engine; and

choosing at least one threshold value selected from the group consisting of a maximum threshold value of the first pollutant component and the minimum threshold value of the first pollutant component as a function of an operating temperature of the catalytic converter device.

32. The method according to claim 23, which comprises providing a catalytic converter device including a catalytic converter selected from the group consisting of a three-way catalytic converter, an oxidation catalytic converter, and a NO_x storage catalytic converter.

33. The method according to claim 23, which comprises providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine.

34. The method according to claim 23, which comprises:

providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine; and

separately determining emission values assigned to respective ones of the exhaust gas paths.

35. The method according to claim 23, which comprises determining accumulated emission values of at least two pollutant components.

36. The method according to claim 23, which comprises using at least one electrochemical sensor in order to determine the emission values of the at least two pollutant components.

37. The method according to claim 23, which comprises using at least one optical sensor in order to determine the emission values of the at least two pollutant components.

38. The method according to claim 23, which comprises using at least one optical sensor operating according to a principle of reflection spectroscopy in order to determine the emission values of the at least two pollutant components.

39. The method according to claim 23, which comprises using at least one optical sensor operating in an infrared light range in order to determine the emission values of the at least two pollutant components.

40. The method according to claim 23, which comprises using at least one sensor having at least one property selected from the group consisting of a measuring time of less than 500 microseconds and measuring intervals of less than 200 microseconds in order to determine the emission values of the at least two pollutant components.

41. The method according to claim 23, which comprises using at least one sensor to determine both, the emission values of the at least two pollutant components and a lambda value of the exhaust gas.

42. A method for operating an internal combustion engine, the method which comprises:

providing a lambda probe in an exhaust gas system of an internal combustion engine for continuously regulating a lambda value of an exhaust gas; and

calibrating the lambda probe by using emission values of at least two pollutant components of the exhaust gas.

43. The method according to claim 42, which comprises using a broadband lambda probe as the lambda probe.

44. The method according to claim 42, which comprises using at least two compounds selected from the group consisting of nitrogen oxide, hydrocarbon and carbon monoxide as the at least two pollutant components.

45. The method according to claim 42, which comprises:

providing a catalytic converter device in the exhaust gas system; and

calibrating the lambda probe as a function of an operating state of the catalytic converter device.

46. The method according to claim 42, which comprises:

providing a catalytic converter device in the exhaust gas system and providing the lambda probe downstream of the catalytic converter device; and

calibrating the lambda probe as a function of an operating state of the catalytic converter device.

47. The method according to claim 42, which comprises:

providing a catalytic converter device in the exhaust gas system; and

calibrating the lambda probe only if the catalytic converter device has an operating temperature in a given window.

48. The method according to claim 42, which comprises:

preregulating an air/fuel ratio designated as lambda by using a signal of the lambda probe such that a setpoint value of lambda is substantially equal to one;

concluding that an actual value of lambda is greater than one when a nitrogen oxide breakthrough occurs and concluding that an actual value of lambda is less than one when at least one

of a hydrocarbon breakthrough and a carbon monoxide breakthrough occurs; and

shifting the air/fuel ratio lambda until the nitrogen oxide breakthrough reaches a minimum and at the same time at least one of the hydrocarbon breakthrough and the carbon monoxide breakthrough reach a minimum.

49. The method according to claim 42, which comprises providing a catalytic converter device including a catalytic converter selected from the group consisting of a three-way catalytic converter, an oxidation catalytic converter, and a NO_x storage catalytic converter.

50. The method according to claim 42, which comprises providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine.

51. The method according to claim 42, which comprises:

providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine; and

separately determining emission values assigned to respective ones of the exhaust gas paths.

52. The method according to claim 42, which comprises determining accumulated emission values of at least two pollutant components.

53. The method according to claim 42, which comprises using at least one electrochemical sensor in order to determine the emission values of the at least two pollutant components.

54. The method according to claim 42, which comprises using at least one optical sensor in order to determine the emission values of the at least two pollutant components.

55. The method according to claim 42, which comprises using at least one optical sensor operating according to a principle of reflection spectroscopy in order to determine the emission values of the at least two pollutant components.

56. The method according to claim 42, which comprises using at least one optical sensor operating in an infrared light range in order to determine the emission values of the at least two pollutant components.

57. The method according to claim 42, which comprises using at least one sensor having at least one property selected from the group consisting of a measuring time of less than 500 microseconds and measuring intervals of less than 200

microseconds in order to determine the emission values of the at least two pollutant components.

58. The method according to claim 42, which comprises using at least one sensor to determine both, the emission values of the at least two pollutant components and the lambda value of the exhaust gas.

59. A method for operating an internal combustion engine, the method which comprises:

determining emission values of at least two pollutant components of an exhaust gas of an internal combustion engine;

comparing the emission values of the at least two pollutant components with given setpoint values for providing a comparison result;

using the comparison result in order to form a state signal characteristic of an operating state of the internal combustion engine; and

performing a diagnosis of the operating state of the internal combustion engine.

60. The method according to claim 59, which comprises:

changing a value of at least one operating parameter as a function of the comparison result in order to change an emission value of a first one of the at least two pollutant components; and

forming the state signal characteristic of the operating state of the internal combustion engine by using at least one value selected from the group consisting of a required value of a change in the at least one operating parameter and a value of a change in a second one of the at least two pollutant components.

61. The method according to claim 59, which comprises performing the diagnosis by determining an ignition behavior as the operating state of the internal combustion engine.

62. The method according to claim 59, which comprises performing the diagnosis by determining at least one event selected from the group consisting of a misfiring, a delayed combustion and a failed ignition.

63. The method according to claim 59, which comprises:

determining at least one parameter selected from the group consisting of a rotational speed of the internal combustion

engine and a change in the rotational speed of the internal combustion engine; and

using the at least one parameter for the diagnosis of the operating state of the internal combustion engine.

64. The method according to claim 59, which comprises:

determimning at least one characteristic selected from the group consisting of a peak height and an envelope curve shape of the emission values of the at least two pollutant components; and

evaluating the at least one characteristic for the diagnosis of the operating state of the internal combustion engine.

65. The method according to claim 59, which comprises using raw emission values as the emission values.

66. The method according to claim 59, which comprises:

providing the internal combustion engine with cylinder banks and associated exhaust gas manifolds; and

performing the diagnosis separately for each of the cylinder banks or each of the associated exhaust gas manifolds.

67. The method according to claim 59, which comprises performing at least one operation selected from the group consisting of displaying a value of the state signal and storing the value of the state signal as a function of the value of the state signal.

68. The method according to claim 59, which comprises providing a catalytic converter device including a catalytic converter selected from the group consisting of a three-way catalytic converter, an oxidation catalytic converter, and a NO_x storage catalytic converter.

69. The method according to claim 59, which comprises providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine.

70. The method according to claim 59, which comprises:

providing a plurality of exhaust gas paths in an exhaust gas system of the internal combustion engine; and

separately determining emission values assigned to respective ones of the exhaust gas paths.

71. The method according to claim 59, which comprises determining accumulated emission values of at least two pollutant components.

72. The method according to claim 59, which comprises using at least one electrochemical sensor in order to determine the emission values of the at least two pollutant components.

73. The method according to claim 59, which comprises using at least one optical sensor in order to determine the emission values of the at least two pollutant components.

74. The method according to claim 59, which comprises using at least one optical sensor operating according to a principle of reflection spectroscopy in order to determine the emission values of the at least two pollutant components.

75. The method according to claim 59, which comprises using at least one optical sensor operating in an infrared light range in order to determine the emission values of the at least two pollutant components.

76. The method according to claim 59, which comprises using at least one sensor having at least one property selected from the group consisting of a measuring time of less than 500 microseconds and measuring intervals of less than 200

microseconds in order to determine the emission values of the at least two pollutant components.

77. The method according to claim 59, which comprises using at least one sensor to determine the emission values of the at least two pollutant components and a lambda value of the exhaust gas.